

WHAT IS CLAIMED IS:

1. A method for managing the preparation of a set of graphical elements for presentation, the method comprising:
 - identifying a first subset of the elements where measurement is desirable;
 - identifying a second subset of the elements where arrangement is desirable;
 - executing a first series of operations for measuring the elements comprising the first subset; and
 - executing a second series of operations for arranging the elements comprising the second subset.
2. The method of claim 1 wherein each element in the first subset has associated with it a respective island of elements, and each element in the second subset has associated with it a respective island of elements.
3. The method of claim 2 wherein identifying the first subset comprises using a first data structure to represent the first subset of the elements, and wherein identifying the second subset comprises using a second data structure to represent the second subset of the elements.
4. The method of claim 3 wherein the first and second data structures are queues.
5. The method of claim 3 wherein the first series of operations comprises:
 - a) identifying a maximal element represented in the first data structure;
 - b) removing the maximal element's representation in the first data structure;
 - c) measuring the maximal element; andrepeating the listed steps until the first data structure is empty.
6. The method of claim 3 wherein the second series of operations comprises:
 - a) identifying a maximal element represented in the second data structure;
 - b) removing the maximal element's representation in the second data structure;
 - c) arranging the maximal element; andrepeating the listed steps until the second data structure is empty.
7. The method of claim 5 wherein step c) comprises measuring an element from the island associated with the maximal element.

8. The method of claim 5 wherein step c) comprises:
determining whether an element from the island associated with the maximal element requires measuring.
9. The method of claim 5 wherein the first series of operations further comprise:
d) notifying a parent element of the maximal element that the measurements of the maximal element have changed.
10. The method of claim 9 wherein, in response to the notification, a representation of the parent element is placed in the first data structure.
11. The method of claim 3 wherein the number of elements represented in the first data structure cannot exceed a fixed maximum number.
12. The method of claim 3 wherein the number of elements represented in the second data structure does not exceed a fixed maximum number.
13. The method of claim 5 wherein the first series of operations further comprises:
d) determining that an orphan element represented on the first data structure is not to be measured; and
e) removing from the data structure the representation of the orphan element.
14. A system for managing the preparation of a set of graphical elements for presentation, the system comprising:
a first data structure representing a first subset of the set of graphical elements requiring measurement;
a second data structure representing a second subset of the set of graphical elements requiring arrangement;
a first procedure using the first data structure for managing the measuring of elements;
and
a second procedure using the second data structure for managing the arranging of elements.
15. The system of claim 14 wherein the first procedure comprises the steps of:

- a) identifying a maximal element represented in the first data structure;
 - b) removing the maximal element's representation in the first data structure;
 - c) measuring the maximal element; and
- repeating the listed steps until the first data structure is empty.
16. The system of claim 14 wherein the second procedure comprises the steps of:
- a) identifying a maximal element represented in the second data structure;
 - b) removing the maximal element's representation in the second data structure;
 - c) arranging the maximal element; and
- repeating the listed steps until the second data structure is empty.
17. The system of claim 15 wherein step c) of the first procedure comprises:
- determining whether an element from an island associated with the maximal element requires measuring; and
 - measuring the element from the island associated with the maximal element if it requires measuring.
18. The system of claim 15 wherein the first procedure further comprises:
- d) notifying a parent element of the maximal element that the measurements of the maximal element have changed.
19. The system of claim 15 wherein the first procedure further comprises:
- d) determining that an orphan element represented on the first data structure is not to be measured; and
 - e) removing from the first data structure the representation of the orphan element.
20. A computer-readable medium including computer-executable instructions facilitating managing the preparation of graphical elements for presentation in a system, computer-executable instructions executing the steps of:
- identifying a first subset of the elements where measurement is desirable;
 - identifying a second subset of the elements where arrangement is desirable;
 - executing a first series of operations for measuring the elements comprising the first subset; and

executing a second series of operations for arranging the elements comprising the second subset.

21. The computer-readable medium of claim 20 wherein each element in the first subset has associated with it a respective island of elements, and each element in the second subset has associated with it a respective island of elements.

22. The computer-readable medium of claim 21 wherein identifying the first subset comprises using a first data structure to represent the first subset of the elements, and wherein identifying the second subset comprises using a second data structure to represent the second subset of the elements.

23. The computer-readable medium of claim 22 wherein the first and second data structures are queues.

24. The computer-readable medium of claim 22 wherein the first series of operations comprises:

- a) identifying a maximal element represented in the first data structure;
- b) removing the maximal element's representation in the first data structure;
- c) measuring the maximal element; and

repeating the listed steps until the first data structure is empty.

25. The computer-readable medium of claim 22 wherein the second series of operations comprises:

- a) identifying a maximal element represented in the second data structure;
- b) removing the maximal element's representation in the second data structure;
- c) arranging the maximal element; and

repeating the listed steps until the second data structure is empty.

26. The computer-readable medium of claim 24 wherein step c) in the first series of operations comprises measuring an element from the island associated with the maximal element.

27. The computer-readable medium of claim 24 wherein step c) in the first series of operations comprises:

determining whether an element from the island associated with the maximal element requires measuring.

28. The computer-readable medium of claim 24 wherein the first series of operations further comprises:

d) notifying a parent element of the maximal element that the measurements of the maximal element have changed.

29. The computer-readable medium of claim 28 wherein the first series of operations further comprises:

e) in response to the notification in step d), placing a representation of the parent element in the first data structure.

30. The computer-readable medium of claim 24 wherein the first series of operations further comprises:

d) determining that an orphan element represented on the first data structure is not to be measured; and

e) removing from the data structure the representation of the orphan element.